Dorsey, Nancy

From: Dorsey, Nancy
Sent: Friday, August 20, 2021 12:42 PM
To: bheard@gcscarbon.com; randrews@gcscarbon.com; jhodgson@gcscarbon.com; GALLAGHER Emily
Cc: Yun, Samuel; Ussery, Ian; Frederick, Forrest; Johnson, Ken-E; Feuer, Daniel
Subject: Completeness Review for the Site Characterization Geoscience Narrative

Good afternoon Ben,

The folder discussed earlier was set-up, but as no specifics are mentioned it made more sense to email our comments.

EPA has reviewed the material submitted for completeness and an eye to sufficient supporting information to submit the remaining application. While there are clean-up items, there does not appear to be any reason to delay continuing the cleanup and resubmission process—with the possible exception of confining zone information.

EPA greatly appreciates the use of the Crosswalk. It is helpful but not necessary to summarize the information as well as the location. Additionally, if one row covers the lower bullets, you only need to enter the location at the top. Also, if the data is a required GSDT field, literally a fill-in field not a narrative question, 'y' or 'yes' for submitted or 'GSDT' for location will suffice.

It appears the submitted document contains a mix of the earlier version and newer text. For example, the hydrostratigraphy section has two variations of the same discussion that do not match. There appears to have been a problem with the last acceptance of marked changes—there are incomplete and unclear sentences dotted throughout the resubmitted piece.

The list of citations must contain all the references cited in the text and figures. A consistent format with last name first would be helpful.

For the Regionally requested supporting information some of the items appear to be missing or incomplete:

- The requested detailed view of provided maps across tightly drilled areas do not appear to be consistently included. This applies to any map with data too tightly packed to read at 100% view.
- There should also be a composite plan view map of both the maximum extent of the plume and the critical pressure. Composite means combine the model timeframes or sensitivities for the property modelled, i.e. plume or critical pressure, to emerge with only the combined view of the maximum possible area affected. Maximum pressure extent should occur at the end of injection operations, while maximum plume extent should occur at the end of the PISC.
- Shapefile metadata should be filled out.
- Search methods includes any well locations or logs, not just water wells. (Though this may be as a reference to another module or document in the application.)
    - When discussing well counts numbers should compare to the row count in the tables provided.

For GSDT recommended narrative information some items appear to have some glitches:

- The stratigraphic column is required to show depths of the regulatory zones for local geology.
- It may help to correlate aquifer units and stratigraphic units, noting if there are regional name changes from different sources or states.
- Core data information listed under the confining zone appears to include a mix of injection and confining zone data and charts. Data write-ups should be broken up to properly reflect the Confining or the Injection Zones in the appropriate sections. The goal is to have a clear summary of the particular zone's capabilities, mineralogy, and properties.

- Reference to a single table, so long as the zone is noted, is acceptable.
- There may be additional publications to pull data for the confining zone. This is a requisite for modeling input to have a reasonable range of properties.

Please contact Samuel Yun, Yun.Samuel@epa.gov, if you wish to set up a meeting to discuss these points.

Regards,

Nancy

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UIC Webpages:
https://www.epa.gov/uic
http://www.epa.gov/uic/underground-injection-control-epa-region-6-ar-la-nm-ok-and-tx

http://www.epa.gov/uic/guidance-documents-completing-class-i-injection-well-no-migration-petitions

Managing and Minimizing Potential of Injection-Induced Seismicity from Class II Disposal: Practical Approaches: http://www.epa.gov/uic/underground-injection-control-national-technical-workgroup-final-issue-papers

Monitoring Injection Wells—Basic Hall integral Method:
https://www.iris.edu/hq/inclass/animation/monitoring_injection_wellsbasic_hall_integral_method

For Class VI applicants, EPA is a regulatory agency and not a research agency. We will not pass on any privileged or commercially valuable information. We will not suggest locations nor supply information. We will answer reasonable questions. It is up to the applicants to research, collect and model scenarios based on their own site-specific data and conditions to meet EPA regulatory standards. This does not prevent us from cautioning against certain locations which have been previously shown to be potentially unsuitable reservoirs through various investigations in other well class permitting actions. You will find many of your answers in the official Guidance documents on the EPA webpage.

Class VI Injection Wells:
https://www.epa.gov/uic/federal-requirements-under-underground-injection-control-uic-program-carbon-dioxide-co2-geologic
https://www.epa.gov/uic/final-class-vi-guidance-documents